

Russian Dandelion Studied as Source Of Rubber for U.S.

By C. A. HENDERSON
Klamath County Agent

Small plants of Kok-Saghyz, the Russian dandelion that produces rubber, are beginning to show good growth at the Klamath experimental area west of the airport.

Klamath county received two small packets of this seed, each pre-conditioned by different methods, and both were planted in the experimental area. Apparently the second shipment of vernalized seed has resulted in a much better stand than the first shipment indicated.

In the July issue of Agriculture in the Americas, published by the United States Department of Agriculture, Office of Foreign Agricultural Relations, a very interesting article appears describing Kok-saghyz, the new Russian rubber dandelion. The article was written by E. W. Brandes and is rather lengthy, but the more important sections of this article with many details of propagation deleted, is as follows:

"A tough little recruit from the plant world has just arrived in the Americas and signed up for war service. Its name is Kok-saghyz, and last year it was grown for rubber on about two acres in the Soviet Union. This year, as the United Nations consolidate their resources, it is being planted on North and South American soil for the first time.

"The newcomer—a domesticated relative of the familiar American dandelion—reached western shores by a magic-carpet journey that was in the best traditions of its native home in Central Asia. Early this summer, the first shipment of kok-saghyz seed was whisked by air from Kulybyshev, the temporary capital of the Soviet Union, to Washington, D. C. After a pause for certain rites of the seedsmen's art and for repacking, the seeds continued by plane to 60 prepared test fields in the United States, Canada, and Alaska. All this happened within a period of three weeks. . . . The success of the American tests will determine where larger plantings will be made next spring.

"The common dandelion of the United States is naturalized from Europe but there are native American kinds also. Like its American cousins, kok-saghyz contains rubber in its root and stem, but nature gave it more rubber to begin with and Russian scientists have increased the percentage by breeding and selection, although the best strains exist even now in limited amounts. Doubtless the imported weed pest of the lawns, or the native American kinds, could have been improved by breeding just as was kok-saghyz in the Soviet Union, but the United States had more promising wild plants such as guayule and goldenrod for beginning points in breeding and had not the same economic incentive for rubber self-sufficiency.

"The currently important root has been a mystery even to the weed exterminators who seldom succeed in bringing up more than a tenth part of it. The long taproot contains most of the rubber-bearing latex, which also may be seen oozing from cut flower stems or leaf midribs. It has a disagreeable, acrid taste well known to children.

"The Allied Nations' war needs have created interest in the dandelion as a source of rubber in spite of its relatively low yields. In contrast with the cultivated Para rubber tree, which may yield 800 to 1000 pounds or more of rubber per acre per year, or cultivated guayule, yielding 350 pounds, the dandelion by any standard of comparison in normal times is decidedly second rate. The great merit of the dandelion lies in the fact that it can be harvested, and roots processed the same year that it is planted, a characteristic that it shares with goldenrod. In the present emergency, with a mounting need for natural rubber, a bird in the hand is worth two in the bush, and the main existing supplies of natural rubber, the product of cultivated Para trees of the Orient or of wild Para and Castilla trees in

tropical America are decidedly "in the bush." The production of wild rubber in tropical America can be vastly increased, but lags in the formulation of international agreements and the modernization of working conditions on a large scale in remote areas are bound to slow realization of potential production. Since new plantations of Para trees require a minimum of 5 to 7 years of development before tapping and cultivated guayule may not be harvested economically in less than 4 years, prompt relief cannot be expected directly from those sources, although they are now healthy infants in the New World.

"Motivated by curiosity as much as by serious expectations of its economic usefulness in the Americas, plant introducers of the United States Department of Agriculture coveted the kok-saghyz as early as 1932, the year after it became known as a potential economic plant in the Soviet Union. Efforts made then and later to obtain seeds were not successful, quite probably because of the inherent reluctance of all plant breeders to turn loose new creations until certain of their final usefulness. Early this year, however, the good offices of the Department of State and of Ambassador Maxim Litvinoff were instrumental in clearing the way for a first shipment, which arrived in Washington on May 8. The solicitude of the Department of State for the shipment may be judged by a recent file of two-way cablegrams that represent instructions, and then almost daily inquiries on the progress and advice on the varied fortunes of two unprepossessing guayule seeds as they traveled by air half round the world. The unstinted efforts of Loy Henderson, now assistant chief of the Division of European Affairs and formerly first secretary of the American Embassy in Moscow, greatly assisted in making this importation possible.

"Like guayule seed, the kok-saghyz seed is minute and requires pre-conditioning before planting to insure prompt, synchronized germination of all seeds and uniform development of the plants. Since one of the chief causes of low yields is poor germination of seeds and consequent gappy stands, close attention is given to seed treatment. The pre-conditioning may consist of soaking in water for 3 or 4 hours about 4 days before the planting date, spreading in a 1-inch-thick layer at ordinary room temperature of about 70 degrees Fahrenheit and stirring every few hours to aerate the seed. When the first seeds germinate, usually in 2 days, the whole lot is removed to a cooler room and spread thinly for partial drying to prevent further pregermination. After another 2 days, or 4 days after soaking, the seeds are ready for planting.

"Under war conditions the problem of constructing industrial plants for processing kok-saghyz roots promptly raises the bugbears of priority ratings for materials and availability of skilled labor. The flow sheet for production of crude rubber from kok-saghyz is somewhat similar to that employed in the fabrication of sugar from sugar beets, however, and adaptation of some of the equipment to the dual purpose appears to be worth investigating. The idea of such adaptation was actually advanced in the Soviet Union just before the outbreak of hostilities with Germany.

"In the United States, the presumptive suitable localities for emergency kok-saghyz production exactly coincide with the present sugar-beet areas. Power plants, steam, housing, and facilities for transporting the roots as well as certain factory equipment are available at 67 sugar-beet factories conveniently situated in the "belt." The harvesting times for the two crops over-

4-H Victory Gardeners



Mrs. R. S. Loosley, leader of the Fort Klamath "Victory Gardeners" club, is shown above instructing members in the art of thinning beets, a stage in growing which comes later there than elsewhere in the county because of the colder climate. Members are Margaret and Kenneth Martell, Virginia Thomas, William, Robert and Kathryn Wampler, Leonard Lahoda, Jack Baker, Joyce Copeland and Wilfred Loosley. Betty Lou Walton, at left, is busy "puddling in" lettuce she is transplanting. She is a member of the Henley "Slap the Jap" club which is led by Mrs. C. H. Young.

lap somewhat, but the kok-saghyz roots require a period for drying and could be processed in the factories after the close of the sugar-beet campaign. If the fall harvest should prove impracticable because of heavy demand for labor, the two-year plantation with harvest during June and July, or other devices, might fit into a scheme of plantation strategy that would tend to level out and stabilize labor requirements. Under present conditions, the idea of extending the use of beet factories, without interference in their regular work, seems worth serious consideration and the interest of sugar-beet company officials has been enlisted in a preliminary study of possibilities.

"The United States urgently needs natural rubber, to be used as such and later to be mixed with synthetic rubber substitutes as a means of extending their usefulness. The most immediate major sources of natural rubber are the wild rubber trees of tropical America, but there is no prospect that they will provide full relief. That is why the Russian dandelion, which yields rubber the same year it is planted, has been brought in as a pinch-hitter on a team that has only one big-name regular, the cultivated Para rubber tree.

Klamath county received two small packets of this seed, each pre-conditioned by different methods, both of which have been planted in the experimental area west of the airport and south of Klamath Falls. The small plants are now starting to make good growth and apparently the second shipment of vernalized seed has resulted in a much better stand than the first shipment indicated.

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Weekly Market Trends

(Editor's Note: The following market information is supplied from material obtained from the government, leased wire in the office of the extension economist at Oregon State college. The material, in the form of a weekly summary of trends in the livestock market, is not intended to replace spot day by day market reports.)

CATTLE MARKETS

The North Portland cattle market regained some of last week's lost ground so far as fed steers were concerned on Monday but the price on grass fat stuff continued lower. With 2100 head available for local sale the good fed steers sold at \$13.25 to \$13.85, equal to the extreme top of last week. Grass fat steers brought mostly \$11.25 to \$12.25 which was slightly under last week's close.

On the San Francisco market fed steers were quoted at \$13.25 while the top for grass fat steers was \$12. Chicago market again showed preference for high quality stuff when choice to prime heavy steers topped at \$15.40. A good demand was reported

in the midwest for yearlings and calves to be put on grass but less demand was noted for feeders to go into feed lots.

Beginning July 13 all fresh beef and veal sold at wholesale must be graded according to government grades, under a recent order of the OPA. The same order standardized the price for each type of wholesale cut.

SHEEP AND LAMB MARKETS

Although 2900 head of sheep and lambs were received at North Portland Monday only 1750 were for local sale. Good to choice spring lambs moved at steady prices, mostly bringing \$11.50 although a few were up to \$11.75. This is 25 cents under the extreme top of last week. Choice lambs were scarce at San Francisco and prices went up to \$13.75, although most sales were slightly under that figure. Somewhat lower prices prevailed at Chicago although a few head of

native spring lambs brought \$14.25.

Marketing of spring lambs in the midwest have been increasing after a slow start this year. Contracting of lambs in intermountain states has been of small volume. The lamb crop was generally retarded in that area and with good range conditions now prevailing, growers are not inclined to sell except at favorable prices.

Some Wyoming and Montana business has been reported at \$10.50 to \$11.50, f.o.b. loading point, for fall delivery. Current contracting in Idaho for delivery reported at \$13. While inspected slaughter of sheep and lambs so far this year has been about four per cent above that of a year ago, slaughtering in the fall half are not expected to differ greatly from those of the same period in 1941.

HOG MARKETS

Hog prices continued last week's rise on Monday when 2100 head were offered locally. Good to choice drive-ins sold mostly at \$14.50 while slightly heavier weights topped at \$14. Highest price paid at San Francisco was \$15.20 for two loads of 190 pound Oregon butchers. Prices slumped somewhat at Chicago with a top price of \$14.65 reported.

The recent gains at North Portland place hog prices at a new high for recent years. They are even a few cents higher than the peak of last April.

WOOL MARKETS

More activity was shown on the Boston wool market last week as mills expecting government blanket orders bought supplies. Early season purchases are crowding warehouse space, thus holding up delivery of more wools for the time being. Fine territory wools sold in moderate volume the last week at ceiling prices for graded lines and only a little under the ceiling for ungraded stuff. Very little activity was reported in short fine wools while there was some inquiry for half blood territory wools, with few actual sales.

Farmers May Be Eligible for Premium Rate Cut

CORVALLIS, July 17 (AP) — The state AAA office disclosed Thursday that Oregon farmers who participated in the federal all-risk crop insurance program since 1939 may be eligible for a 50 per cent premium rate reduction.

The reduction will be available to participants in the program whose paid-in premiums equal or exceed his insured production for any crop year.

Growers not eligible this year will become so when accumulated premiums, minus indemnities, exceed the insured production for the year.

INSPECTION OF SEED SPUDS TO START JULY 20

Professor G. R. Hyslop of Oregon state college will be in the county Monday, July 20, to start the first field inspection for certified seed potatoes, alfalfa and cereal crops. Growers of these crops should not wait for the arrival of the inspector before roguing out their fields of diseased plants. Roguing consists of going through your fields systematically and removing all diseased plants in the case of potatoes, and weeds or other crop plants in the case of alfalfa and cereals.

Systematic roguing of potatoes consists of removing the entire hill which shows lack of vigor or symptoms of disease. Many of the potato diseases are spread by plant lice or aphids. Plants, seed pieces, and new tubers from diseased hills should be taken out, placed in a sack or box to avoid scattering any aphids that may be present, and removed from the field. The roguer should grasp the plants near the soil and avoid unnecessary shaking. Roguing should be done in the season and as often as necessary to control the diseases, which may be from four to eight times during the season. Even after the first field inspection roguing should be continued, according to instructions of the inspector in order to be eligible for the second inspection.

Stockmen May Purchase Stored Wheat During July

CORVALLIS, July 17 (AP) — Oregon livestock growers will be able to purchase government stored wheat for feeding throughout July, the state USDA war board said Thursday.

About a million and a half bushels of Oregon wheat has been sold for poultry and livestock feed since February under this program. Prices during the period will continue to be based on 1941 loan values, the board said.

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